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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/653,207	09/03/2003	Minako Kato	00862.023215.	2568

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EXAMINER	
HAUPT, KRISTY A	

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/653,207	KATO ET AL.	
	Examiner	Art Unit	
	Kristy A. Haupt	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Election dated 23 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,7,10 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 2, 3, 5, 6, 8, 9, 11, 12, 13 and 14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on May 18, 2005.

PRIORITY

The Examiner acknowledges the Applicant's request for priority under 35 USC §119 for Application Number 10/653,207 filed September 9, 2002.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on November 14, 2003 and May 3, 2004 are in compliance with the provisions of 37 CFR 1.97, and accordingly, have been considered by the Examiner.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 4, 7, 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noyes et al. (6,364,452 B1) in view of Clark (6,409,318 B1).

With respect to claim 1, Noyes teaches:

- An ink-jet printing method for performing printing by scanning an ink-jet printhead over a print medium (Column 52, Lines 54-56), said ink-jet printhead having orifices for discharging ink droplets of a first volume and orifices for discharging ink droplets of a second volume smaller than the first volume (Column 13, Lines 15-17)
- A selecting step of selecting a mode, which is to be used in printing (Column 30, Lines 25-26), from a first mode in which printing in a prescribed area on the print medium is completed in a predetermined time (Figure 27C shows a Standard Print Mode with a High Line Feed Speed), and a second mode in which printing in the prescribed area is completed in a time longer than the predetermined time (Figure 27C shows a High Print Mode with a Normal Line Feed Speed) where a High Line Feed Speed corresponds to 7200 pps and a Normal Line Feed Speed corresponds to 3400 pps (Figure 27D)
- A data generating step (Figure 20, # S2003) of executing data processing (Figure 20, # S2009) and generating print data in accordance with the mode selected (Figure 20, # S2001)

- A printing step of carrying out printing by discharging ink toward the print medium from the ink-jet printhead based upon the print data generated (Figure 20, # S2012)

With respect to claim 4, Noyes teaches:

- A printing system (Column1, Line 5) comprising an ink-jet printing apparatus and a host device for transmitting print data to said printing apparatus (Column 8, Lines 47-51)
- Wherein said printing apparatus performs printing by scanning an ink-jet printhead over a print medium (Column 52, Lines 54-56), the printhead having orifices for discharging ink droplets of a first volume and orifices for discharging ink droplets of a second volume smaller than the first volume (Column 13, Lines 15-17)
- Said printing apparatus is capable of printing in either a first mode in which printing in a prescribed area on the print medium is completed in a predetermined time (Figure 27C shows a Standard Print Mode with a High Line Feed Speed), or a second mode in which printing in the prescribed area is completed in a time longer than the predetermined time ((Figure 27C shows a High Print Mode with a Normal Line Feed Speed) where a High Line Feed Speed corresponds to 7200 pps and a Normal Line Feed Speed corresponds to 3400 pps (Figure 27D))

- Said host device including mode selecting means for allowing a user to select a mode, which is to be used in printing, from the first and second modes (Column 13, Lines 9-11 where host processor includes a keyboard for entering text data and user commands (Column 6, Lines 23-24 and 28))
- Said host device including data processing means for executing data processing and generating print data in accordance with the mode selected by said mode selecting means (Column 13, Lines 52-56)

With respect to claim 7, Noyes teaches:

- An ink-jet printing apparatus for performing printing by scanning an ink-jet printhead over a print medium (Column 52, Lines 54-56), the printhead having orifices for discharging ink droplets of a first volume and orifices for discharging ink droplets of a second volume smaller than the first volume (Column 13, Lines 15-17)
- Said apparatus being capable or printing in either a first mode in which printing in a prescribed area on the print medium is completed in a predetermined time (Figure 27C shows a Standard Print Mode with a High Line Feed Speed), or a second mode in which printing in the prescribed area is completed in a time longer than the predetermined time (Figure 27C shows a High Print Mode with a Normal Line Feed Speed) where a

High Line Feed Speed corresponds to 7200 pps and a Normal Line Feed Speed corresponds to 3400 pps (Figure 27D)

- Said apparatus comprising mode discriminating means for discriminating which of the first and second modes has been set (Column 30, Lines 25-29)
- Converting means for converting entered image data to print data in accordance with the mode discriminated by said mode discriminating means (Column 16, Lines 2-4)
- Printing control means for carrying out printing by discharging ink toward the print medium from the ink-jet printhead based upon the print data (Column 16, Lines 7-11 and 13-19)

With respect to claim 10, Noyes teaches:

- A method of generating print data for use by an ink-jet printing apparatus (Figure 20, # S2003) that performs printing by scanning an ink-jet printhead over a print medium (Column 52, Lines 54-56), the printhead having orifices for discharging ink droplets of a first volume and orifices for discharging ink droplets of a second volume smaller than the first volume (Column 13, Lines 15-17)
- A selecting step of selecting a mode, which is to be used in printing (Column 30, Lines 25-26), from a first mode in which printing in a prescribed area on the print medium is completed in a predetermined time

(Figure 27C shows a Standard Print Mode with a High Line Feed Speed), and a second mode in which printing in the prescribed area is completed in a time longer than the predetermined time ((Figure 27C shows a High Print Mode with a Normal Line Feed Speed) where a High Line Feed Speed corresponds to 7200 pps and a Normal Line Feed Speed corresponds to 3400 pps (Figure 27D))

- A data generating step (Figure 20, # S2003) of executing data processing (Figure 20, # SS2009) and generating print data in accordance with the mode selected (Figure 20, # S2001)

With respect to claim 15, Noyes teaches:

- A printer driver (Figure 8, # 84), which is implemented by a computer connectable to an ink-jet printing apparatus (Figure 8, # 2), for driving said printing apparatus in accordance with a default function (Column 90, Lines 27-32) via a bi-directional interface (Figure 8, # 76)
- Said printing apparatus for performing printing by scanning a carriage for mounting an ink-jet printhead over a print medium (Column 52, Lines 54-56), the printhead having orifices for discharging ink droplets of a first volume and orifices for discharging ink droplets of a second volume smaller than the first volume (Column 13, Lines 15-17)
- Said printing apparatus having a first mode for high-speed printing (Figure 27C shows a Standard Print Mode with a High Line Feed Speed) and a

second mode for high-quality printing (Figure 27C shows a High Print Mode with a Normal Line Feed Speed)

- Program code corresponding to a mode selecting step for allowing a user to select (Column 23, Lines 20-23) whether specified image data should be printed in the first mode or the second mode (Column 13, Lines 9-11)
- Program code corresponding to a converting step of converting the image data to the print data in accordance with the mode selected at said mode selecting step (Column 15, Lines 65-67 and Column 16, Lines 1-4)

Noyes fails to explicitly teach:

With respect to claim 1:

- Wherein in said data generating step, data processing is executed in such a manner that a number of ink droplets of the second volume used in printing an area of high density or high saturation in regard to a prescribed color in the first mode will be less than a number of ink droplets of the second volume used in printing this area in the second mode

With respect to claim 4:

- Said data processing means executing data processing in such a manner that a number of ink droplets of the second volume used in printing an area of a high density or high saturation in regard to a prescribed color in

the first mode will be less than a number of ink droplets of the second volume used in printing this area in the second mode

With respect to claim 7:

- Wherein said converting means performing a data conversion in such a manner that a number of ink droplets of the second volume used in printing an area of a high density or high saturation in regard to a prescribed color in the first mode will be less than a number of ink droplets of the second volume used in printing this area in the second mode

With respect to claim 10:

- Wherein in said data generating step, data processing is executed in such a manner that a number of ink droplets of the second volume used in printing an area of high density or high saturation in regard to a prescribed color in the first mode will be less than a number of ink droplets of the second volume used in printing this area in the second mode

With respect to claim 15:

- Said converting step including a setting step of making a setting in such a manner that a number of ink droplets of the second volume used in printing an area of a high density or high saturation in regard to a

prescribed color in the first mode will be less than a number of droplets of the second volume used in printing this area in the second mode

However, Clark teaches:

With respect to claim 1:

- Wherein in said data generating step, data processing (Column 3, Lines 30-35) is executed in such a manner that a number of ink droplets of the second volume used in printing an area of high density or high saturation in regard to a prescribed color in the first mode will be less than a number of ink droplets of the second volume used in printing this area in the second mode (Column 4, Lines 40-44 where no small ink droplets are used in the draft mode)

With respect to claim 4:

- Said data processing means executing data processing (Column 3, Lines 30-35) in such a manner that a number of ink droplets of the second volume used in printing an area of a high density or high saturation in regard to a prescribed color in the first mode will be less than a number of ink droplets of the second volume used in printing this area in the second mode (Column 4, Lines 40-44 where no small ink droplets are used in the draft mode)

With respect to claim 7:

- Said converting means performing a data conversion (Column 3, Lines 30-35) in such a manner that a number of ink droplets of the second volume used in printing an area of a high density or high saturation in regard to a prescribed color in the first mode will be less than a number of ink droplets of the second volume used in printing this area in the second mode (Column 4, Lines 40-44 where no small ink droplets are used in the draft mode)

With respect to claim 10:

- Wherein in said data generating step, data processing (Column 3, Lines 30-35) is executed in such a manner that a number of ink droplets of the second volume used in printing an area of high density or high saturation in regard to a prescribed color in the first mode will be less than a number of ink droplets of the second volume used in printing this area in the second mode (Column 4, Lines 40-44 where no small ink droplets are used in the draft mode)

With respect to claim 15:

- Said converting step including a setting step (Column 3, Lines 30-35) of making a setting in such a manner that a number of ink droplets of the

second volume used in printing an area of a high density or high saturation in regard to a prescribed color in the first mode will be less than a number of droplets of the second volume used in printing this area in the second mode (Column 4, Lines 40-44 where no small ink droplets are used in the draft mode)

Therefore, it would have been obvious to one skilled in the art to modify the print head in Noyes to use a greater number of ink droplets of the second volume in the second mode in order to reduce the frequency with which the printhead must be serviced, which increases printer throughput for draft-mode printing (Column 5, Lines 20-22 and 25-27).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristy A. Haupt whose telephone number is (571) 272-8545. The examiner can normally be reached on M-F 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KAH

LAMSON NGUYEN
PRIMARY EXAMINER
05/20/05